What is claimed is:

1.   A memory system for use with a data processing system comprising:

at least one memory matrix unit having a memory matrix capable of storing

5   data therein; and

at least one management unit for interfacing between the memory matrix unit

and the data processing system and being configured to reduce time for a program

running on the data processing system to access data stored in the memory system by

having at least one application programming interface (API) configured to store,

10   manipulate, and retrieve data in the memory matrix based on a property of the data.

2.   A memory system according to claim 1 wherein the memory system is

compatible with Extensible Markup Language (XML) format structured documents,

and wherein the management unit is configured to parse and store data from XML

15   compliant documents according to data type, and to format XML documents into

multiple presentation formats using Extensible Stylesheet Language (XSL) templates.

3.   A memory system according to claim 2, wherein the memory system is

capable of being synchronized with another XML enabled storage device.

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4.   A memory system according to claim 2, wherein the management unit is

further configured to provide a running total of data having a specified property

written to the memory matrix.

25   5.   A memory system according to claim 1, wherein the property of the data

includes a logical type of the data or an organization of the data.

6.   A memory system according to claim 1, wherein the memory matrix comprises

at least one component of a database, and wherein the memory system is SQL enabled

30   to create, process, update, sort, and query the component of the database using SQL

queries.

7.   A memory system according to claim 6, wherein data in the database is stored

as a plurality of records, and wherein the memory system is capable of compressing

data stored in the database in real-time by recovering storage space of deleted records.

8.   A memory system according to claim 6, wherein the management unit is configured to provide custom partitioning, bit-level locking, and manipulation of data

5   written to the memory matrix.

9.   A memory system according to claim 1, wherein the management unit and the memory matrix unit are configured to provide on-demand random access to data stored in the memory matrix.

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10.   A memory system according to claim 1, wherein the memory matrix comprises:

        a plurality of Random Access Memory (RAM) devices each capable of storing data therein, the memory devices arranged in a plurality of banks each having a

15   predetermined number of memory devices;

        a memory controller coupled to each of the banks and capable of accessing the memory devices;

        a cache coupled to the memory controller, the cache having stored therein one or more copies of a file or Data Allocation Table (DAT) adapted to describe files data

20   stored in the memory devices;

        a processor coupled to the memory controller of the banks of memory devices;

        a read-only memory (ROM) device coupled to the processor, the ROM device having stored therein an initial boot sequence to boot the memory matrix unit;

        a memory device coupled to the processor to provide a buffer memory to the

25   processor; and

        a network interface controller adapted to couple the processor to a data network.

11.   A memory system according to claim 10, wherein the management unit

30   comprises:

        a primary processor coupled to the memory controller of the memory matrix;

        a read-only memory (ROM) device coupled to the primary processor, the ROM device having stored therein an initial boot sequence to boot the management unit; and

a memory device coupled to the primary processor to provide a buffer memory to the primary processor.

12.   A method of operating a memory system to accelerate execution of an
5   application running on a data processing system, the memory system having a
memory matrix unit with a memory matrix capable of storing data therein and a
management unit configured to interface between the memory matrix unit and the data
processing system, comprising steps of:

receiving data from the data processing system data;
10   determining a property of the data;
storing the data in a predetermined location in the memory matrix based on the
property;
retrieving the data from the memory matrix.

15   13.   A method according to claim 12, further comprising the step of manipulating
the data.

14.   A method according to claim 13, wherein the step of determining a property of
the data comprises the step of determining which one of a plurality of logical data
20   types the data is, and wherein the step of manipulating the data comprises the step of
providing a running total of data of a specific logical type and having a pre-specified
criteria.

15.   A method according to claim 13, wherein the step of manipulating the data
25   comprises the step of providing summary information about data of a specific logical
type and having a pre-specified criteria.

16.   A method according to claim 12, wherein the memory matrix comprises a
plurality of Random Access Memory (RAM) devices arranged in a plurality of banks
30   each having a predetermined number of memory devices, and wherein the step of
storing the data in a predetermined location in the memory matrix comprises the steps
of:

applying a row address and a column address to a port on at least one of the
memory devices;

latching the row address and the column address; and

applying the data to the port.

17.   A method according to claim 16, wherein the step of retrieving data from the

5   memory matrix comprises the step of providing on-demand random access to data

stored anywhere in the memory matrix.

18.   A method according to claim 12, wherein the memory matrix comprises at

least one component of a database having data stored as a plurality of records, the

10   memory system being SQL enabled to create, process, update, sort, and query the

component of a database using SQL queries, and wherein the steps of storing and

retrieving data from the memory matrix comprises the steps of storing and retrieving

data from the memory matrix using SQL queries.

15   19.   A method according to claim 12, wherein the method comprises the further

step of reclaiming storage space associated with a deleted record using SQL queries,

whereby the component of a database is compacted in real-time.